

AMENDMENTS TO THE CLAIMS

Pursuant to 37 C.F.R. § 1.121 the following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A method for representation, ~~interpolation~~ and/or compression of data, the method comprising the steps of:

identifying a two-dimensional interpolation function $s(z)$ based on a sampling function $a(z)$, wherein a Cauchy integral theorem being is applicable for the interpolation function $s(z)$; and

using the interpolation function $s(z)$ for at least one of representation, ~~interpolation~~ and compression of the data.

2. (Original) The method as recited in claim 1, wherein a residue theorem is applicable for the interpolation function $s(z)$.

3. (Currently Amended) The method as recited in claim 1 wherein the sampling function $a(z)$ is a function over the complex numbers for which $a(0)=1$ and at ~~at~~ least all other sampled values z_j to be considered is equal to zero.

4. (Original) The method as recited in claim 3 wherein the interpolation function $s(z)$ can be represented by

$$s(z) = \sum s_j a(z - z_j)$$

wherein $s(z)$ is capable of being represented by the function values s_j at the complex sampling points z_j .

5. (Original) The method as recited in claim 1 wherein the sampling function $a(z)$ is constructed using at least one of a double-periodic and a quasi-double periodic complex function.

and representing the data by points on a closed boundary curve, the representing being performed using the interpolation function $s(z)$.

15. (Original) The method as recited in claim 14 wherein the mapping the data onto points within the curve C is performed on a line-by-line basis.

16. (Original) The method as recited in claim 2 wherein the using the interpolation function for the compression of the data is performed by mapping the data is mapped onto points within a curve C and representing the data by points on a closed boundary curve, the representing being performed using the interpolation function $s(z)$.

17. (Original) The method as recited in claim 1 wherein the data is automatically processable.

18. (Currently Amended) A computer readable medium having stored thereon computer executable process steps operative to perform a method for representation,~~interpolation~~ and/or compression of data, the method comprising the steps of:

identifying a two-dimensional interpolation function $s(z)$ based on a sampling function $a(z)$, wherein a Cauchy integral theorem ~~being~~ is applicable for the interpolation function $s(z)$; and

using the interpolation function $s(z)$ for at least one of representation,~~interpolation~~ and compression of the data.

19. (Currently Amended) A computer system comprising a processor configured to execute computer executable process steps operative to perform a method for representation,~~interpolation~~ and/or compression of data, the method comprising:

identifying a two-dimensional interpolation function $s(z)$ based on a sampling function $a(z)$, wherein a Cauchy integral theorem ~~being~~ is applicable for the interpolation function $s(z)$; and

using the interpolation function $s(z)$ for at least one of representation, ~~interpolation~~ and compression of the data.

20. (New) The method as recited in claim 3, further comprising the step of:

calculating values of the two-dimensional interpolation function $s(z)$ within a closed curve C using values of the two-dimensional interpolation function $s(z)$ located on a boundary of an area bounded by C so as to perform a low-pass filtering of the data.